

REMARKS/ARGUMENTS

In the present application, expanded keyword searches are performed using a hierarchical structure of groups of related keywords arranged as nodes that are identified by keyword or node terms. As shown in Figure 4, whenever a document 404 is going to be included into a textual database for access on the internet, a semantic binder is automatically added off line to the textual index for the document to associate keywords such as "video player" in the document 404 with (one or more) of the keyword node terms (here "multimedia") which are defined in a semantic taxonomy 400. When a search is performed containing the keyword "video player", a search application looks through a semantic dictionary (which contains table mapping keywords to the nodes of the hierarchical structure) to see whether any corresponding keyword node term can be applied to the searchers keyword query. When one is found, the search application automatically transforms the users query into an expanded query which contains both the "original keyword query term" OR "keyword node term" so that the textual database is interrogated not only for documents that contain the term "video player" (as does document 412) but also for documents that are linked to the keyword node term "multimedia". As a result, relevant documents 408 and 410 will be identified even though they do not contain the keyword "video player" used in the users query but are returned because those documents contain other keyword terms linked by the semantic binder to the keyword node term "multimedia".

In the "Response to Arguments" section in his 3/11/09 action, the Examiner cites figures and sections of the Omoigui reference to arguments presented by the applicants. In each case, the Examiner concludes his comments with a statement about what the cited portions of Omoigui "implies". For instance, the Examiner cites Figure 61 and paragraphs 249; 273 and 1058 and states "translating natural language queries into structured semantic queries implies modifying a user's keyword query by adding a semantic node to expand a user's search" (emphasis added). This does not

meet the requirements for rejection under 35 USC 102. A single reference must expressly or inherently teach all elements of the claimed subject matter, not just imply that they may be taught. Further, it is difficult to see how Figure 61 and paragraph 1058 can imply that Figure 61 teaches "adding a semantic node to expand a user's search". This is contrary to what is stated about Figure 62 in paragraph 1058, lines 12 to 14. Those lines state that the use of Figure 61 is to create a new Smart Agent. As pointed out previously, an Agent is a defined term. Paragraph 190 states that Agents filter returns. The filtering can be to object types, context or combination thereof. Filtering search returns using Agents reduces the number of documents returned to those related to a particular Agent or Agents and therefore does not increase the number of documents returned by a search as is the case with applicants' invention. Furthermore, nothing is shown in Figure 61 or is discussed in paragraph 1058 that anticipates having groups of related keywords arranged as nodes of a hierarchical structure, attaching an identifier of those nodes to the textual indices of documents in a database and expanding keyword searches by inclusion of the identifier in the query to detect the identifier in the textual indices and thereby increase the number of documents returned by a keyword search.

The above comments concerning the requirements of a valid 102 rejection apply to the Examiner's position that paragraph 609 implies the existence of a semantic dictionary builder. For a 102 rejection, the reference must express or inherently teach use of a semantic dictionary builder. Further, it is difficult to see that a semantic dictionary builder for applicants' purposes is implied since there is no need for a semantic dictionary builder to add an identifier of nodes to both indices of documents and keyword searches in Omoigui.

The above comments, concerning the requirements of a 102 rejection, apply to the Examiner's position that paragraphs 1112 and 1319 simply that queries in Omoigui are ordered in accordance with the number of times they are used. Furthermore,

ranking of queries by relevance to an Agency and for time sensitivity almost assures that they are not arranged in a dictionary in order of the number of times that they are used.

To accommodate the Examiner on the issue of whether the computer usable medium is claimed in claim 9 applicants' attorney has added the medium to the body of the claim.

Claim Rejections under 35 USC 102

Claims 1 to 16 were rejected under 35 USC 102(e) as being anticipated by Omoigui (USPAP 2003/0126136).

In rejecting the independent claims in the application 1, 9 and 17, the Examiner cites various paragraphs in the Omoigui publication. In his reading of these paragraphs, applicants' attorney did not find that they describe a search system that automatically attaches a semantic or keyword node both to the textual indexes of documents and to a users original query so that relevant documents can be found in the database using a simple expanded database query even though those documents do not contain one or more keyword terms in the original users query. The Examiner cites paragraphs (paragraphs 249 and 273 and 1058) in connection with Figure 61. See the applicants above comments about Figure 61 and paragraph 1058. With respect to paragraph 273, it defines Semantic Queries as queries that approach natural language, and distinguishes them from keyword queries stating that semantic queries are much more powerful than simple keyword based queries in that the semantic queries are context and time sensitive and incorporate meaning or semantics. Paragraph 15 says the semantic queries are akin to natural language queries and states that such semantic

query requests are not possible on today's web. Thus the semantic queries and natural language queries of the Omoigui reference are not the simple keyword based queries used in the present application. Furthermore, the system of the present application does not require the natural language parser defined in paragraph 249 since there is no need to translate natural language queries into structured semantic information queries when simple keyword based queries are used.

All the claims in the present application are limited to use of keyword based queries which do not fall within the purview of the definition of semantic queries set forth in paragraph 273 or require the use of a parser as defined in paragraph 249. Independent claims 1, 9 and 17 all call for attaching a keyword or semantic node term applicable to keyword terms used in a set of documents and for enhancing the user's keyword query with the keyword or semantic node term applicable to the user's keyword query term. Nothing in paragraphs 249 or 273 teaches anything about providing such enhanced simple keyword queries or modifying the textual indexes of the documents in the database by adding links to such keyword or semantic node terms.

Further, the Examiner cites paragraphs 510, 74 and 217 of the Omoigui reference against claims 1, 9 and 17 as teaching use of such enhanced queries. Applicants' attorney did not find such a teaching in these paragraphs. Paragraph 510 deals with publishing and sharing of Agents. There is nothing in paragraph 510 about automatically modifying a user's keyword query by adding a semantic node to expand a users search. Paragraph 74, lines 14 to 17, deals with the use of Agents with other applications. There is no mention in these lines about automatically modifying a user's keyword query by adding a related semantic node. Paragraph 217, lines 24 to 27, mentions that the user has semantic means for navigating. There is no mention in the paragraph on automatically modifying a user's keyword query by addition of a related semantic node term. In fact, there is no mention of keyword queries at all in the above sections cited by the Examiner. Further as pointed out above, the definition paragraph

273 of Semantic Queries used in Omoigui clearly distinguishes such queries from "keyword queries" claimed in claims 1, 9 and 17. Therefore, claims 1, 9 and 17 distinguish from the Omoigui publication since there is no mention in paragraphs 510, 74 and/or 217 of keyword queries, let alone automatic modification of a users keyword query by addition of a semantic node term, as claimed in those claims.

Claims 17 and 19 further distinguish over the prior art in that they call for searching documents for applicable semantic node terms in the documents and, using a semantic binder to attach a semantic node term to textual indexes of documents. The Examiner cites paragraph 166, paragraph 317, paragraph 311 and paragraph 1058 as teaching this. There is no mention of a textual indexing of documents in these sections let alone attaching a semantic node term to those textual indexes.

The dependent claims further distinguish over the prior art.

In rejecting claims 2, 10 and 18, the Examiner cites paragraph 249, 173 and 1058 of Omoigui. The Examiner contends that these paragraphs of Omoigui cited against claims 2, 10 and 18 teach providing an enhanced search query terms that automatically includes both "the users keyword search query" OR "the semantic node term", as claimed in claims 2, 10 and 18. Claims 2, 10 and 18 depend from claims 1, 9 and 17, respectively. Therefore, claims 2, 10 and 18 distinguish from these paragraphs for the reasons given above for claims 1, 9 and 17. In addition, claims 2, 10 and 18 distinguish from paragraphs 249, 173 and 1058 in that these paragraphs do not mention anything about a keyword search query that automatically includes the "users search query or the keyword node term" as claimed in claims 10 and 18.

In rejecting claims 3, 11 and 19, the Examiner cites paragraph 638 of Omoigui. Paragraph 638 deals with the Server Side Semantic Query Processor (SQP) of Omoigui. SQP responds to semantic queries from clients. As pointed out above, semantic queries are distinguished from keyword queries in Omoigui by definition in paragraph 278, lines 3 to 5. Claims 3, 11 and 19 call for a dictionary that defines keyword query terms in user queries in accordance with nodes of a hierarchical structure of keywords not with a processor for handling semantic queries. Therefore, claims 3, 11 and 19 do not read on paragraph 638. In addition, claims 3, 11 and 19 depend from claims 2, 10 and 18, respectively. Therefore, claims 3 and 11 distinguish from the Omoigui publication for the reasons given above for claims 1, 9 and 17 and claims 2, 10 and 18, in addition to the reasons given in this paragraph.

With respect to claims 4, 12 and 20, the Examiner cites paragraph 609, lines 1 to 8 of Omoigui as disclosing a semantic dictionary builder. Claims 4 and 12 call for increasing keyword terms in a semantic dictionary and identifying them with one or more semantic node terms. Paragraph 609 deals with adding information to the Semantic Network described in the Omoigui patent. The present invention does not involve use of such a Semantic Network and the independent claims clearly distinguish the present invention from that semantic network. Claims 4, 12 and 20 depend from the independent claims. Therefore, claims 4, 12 and 20 are distinguishable from the Omoigui reference for reasons given above, in addition to the reasons given in this paragraph.

The Examiner cites paragraphs 1319 and 1112 of Omoigui against claims 5 and 13. Neither reference discusses using enhanced queries to place keyword query terms in order of the number of times that they are used to shorten table lookup times, as claimed in claims 5 and 13.

For the reasons given above, claims 1, 2, 3, 5, 9, 10, 12 and 13 all distinguish from the prior art. The other dependent claims depend from either claims 1 and 9 through other of the dependent claims and therefore distinguish over the prior art for the same reasons as those given for claims 1 and 9, and those other dependent claims. They also contain further limitations that also distinguish them from the prior art.

The structures of the Omoigui reference and the present invention serve different and opposing purposes. The Omoigui reference provides for a system to obtain semantic meaning by using Agents to filter returns to obtain semantic meaning. Filtering reduces the number of documents provided to the user. As opposed to this, the present application provides for enhancement of a users traditional keyword query for the internet by addition of one or more other related keyword query terms to increase the number of documents available to the user. What appears to the applicants' attorney is that the Examiner went through the Omoigui reference and selected portions of Omoigui which he considered applicable to the present application. As discussed in detail above, the cited sections do not anticipate applicants' claims involving accessing the internet in the traditional manner using an expanded query, but relate to a semantic system to obtain desired references. The disparity of the purposes of the teaching of the present application and Omoigui make it clear that these sections differ both in content and purpose from the language and intent of the claims in the present application.

Rejection under 35 USC 101

Claims 9 to 16 have been rejected as being directed to nonstatutory subject matter. The referred to claims call for a computer program on a computer usable medium. This is a useful machine or article of manufacture in combination with processors and therefore constitutes statutory subject matter under 35 USC 101.

As pointed out above, applicants' have added the computer usable medium to the body of the claim in light of the Examiner's comments.

For the above reasons, it is respectfully submitted that all claims are allowable, and therefore it is requested that the application be reconsidered, allowed and passed to issue.

RESPECTFULLY SUBMITTED,

A handwritten signature in black ink, appearing to read "James E. Murray", is written over the printed name.

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